ABSTRACT

Automatic Hydro Metallurgy is the way of process of metal with aqueous solution that operates automatically using Programmable Logic Controller (PLC). Hydro Metallurgy process periodically running for two hour a day. To get the high quality of the products, need to monitored of some parameter such as temperature, pH, conductivity, and oxygen of the aqueous solution. But some times the operator not always in the laboratory. In order to monitor all the times, in this final project has been designed monitoring system from automatic process of Hydro Metallurgy by SMS.

At the system, operator's cellular phone, functioning as a client and SMS sender system functioning as server. There are two scenarios that used to monitor data, the first is automatic report and the second is report by request. At the first scenario, server sends data to client periodically 2 hour by SMS. In another hand, at the second scenario server works after receives a request from client to send the data by SMS.

Generally, system consists of microcontroller, cellular phone, and sensors. According to the result of the test sensitivity of the temperature sensor is 0.052V/°C, sensitivity of pH sensor is 200mV/pH, sensitivity of conductivity sensor is 8.75mV/ µS/cm, sensitivity of oxygen sensor is 8.737mV/%O2. Standard deviation of each sensor is 0.267 for temperature sensor, 0.506 for pH, 2.56 for conductivity sensor, and 0.652 for oxygen sensor. Finally the average delay that needed to access data is 35.23 second.